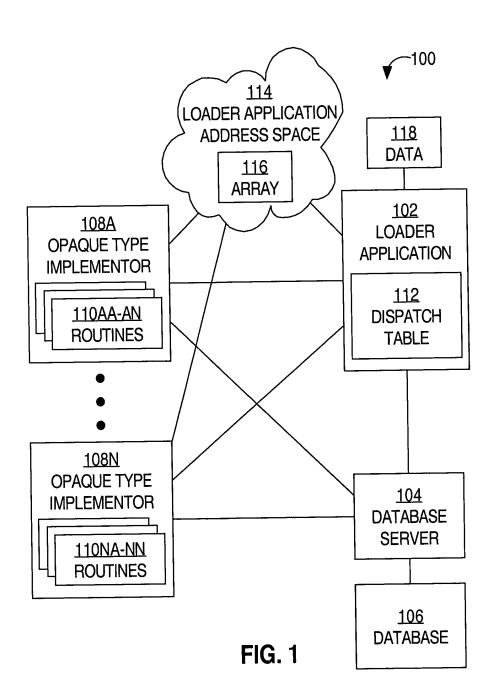
Title: Direct Loading Of Opaque Types

Inventor(s): Namit Jain, et al.

Date: August 25, 2003 Express Mail No. EV322192420US

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FIG. 2

200

202 OPAQUE TYPE IMPLEMENTOR REGISTERS, WITH A LOADER APPLICATION, ROUTINES THAT ARE IMPLEMENTED BY THE OPAQUE TYPE IMPLEMENTOR

Y

204 LOADER APPLICATION ADDS, TO A DISPATCH TABLE, AN ENTRY THAT INDICATES AN ASSOCIATION BETWEEN THE ROUTINES AND AN OPAQUE TYPE THAT THE OPAQUE TYPE IMPLEMENTOR IMPLEMENTS

206 LOADER APPLICATION RECEIVES DATA OF AN OPAQUE TYPE

208 LOADER APPLICATION DETERMINES, FROM THE DISPATCH TABLE, WHICH ROUTINES ARE ASSOCIATED WITH THE OPAQUE TYPE

210 LOADER APPLICATION INVOKES THE ROUTINES

211 LOADER APPLICATION INVOKES ROUTINES TO DISCOVER THE STRUCTURE (NUMBER AND TYPES OF ATTRIBUTES) OF THE OPAQUE TYPE

212 ROUTINE CREATES AN ARRAY THAT COMPRISES A SEPARATE COLUMN FOR EACH ATTRIBUTE OF THE OPAQUE TYPE

214 ROUTINE POPULATES THE COLUMNS OF THE ARRAY WITH VALUES OF INSTANCES THAT ARE SPECIFIED IN THE DATA

216 LOADER APPLICATION GENERATES A DATA STREAM BASED ON THE ARRAY

218 LOADER APPLICATION STREAMS THE DATA TO A DATABASE SERVER

220 DATABASE SERVER WRITES THE DATA DIRECTLY INTO THE DATABASE

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